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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	14

Application Number	09/899,583; Confirmation No. 5290
Filing Date	07/06/2001
First Named Inventor	Charles W. Norman
Art Unit	2665
Examiner Name	Steven H. D. Nguyen
Attorney Docket Number	1226a

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☒ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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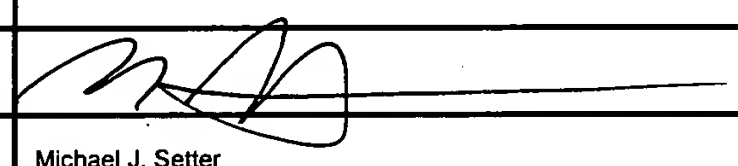
Signature			
Printed Name	Michael J. Setter		
Date	12/3/04	Reg. No.	37,936

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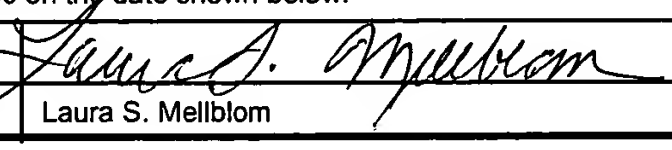
Signature			
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PTO/SB/17 (10-04v2)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 340

Complete if Known	
Application Number	09/899,583; Confirmation No. 5290
Filing Date	07/06/2001
First Named Inventor	Charles William Norman
Examiner Name	Steven H. D. Nguyen
Art Unit	2665
Attorney Docket No.	1226a

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 210765

Deposit Account Name: Sprint Communications Company, L. P.

The Director is authorized to: *(check all that apply)*
☒ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) or any underpayment of fee(s)
☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	790	2001	395	Utility filing fee	
1002	350	2002	175	Design filing fee	
1003	550	2003	275	Plant filing fee	
1004	790	2004	395	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below		Fee Paid
Total Claims		-20 **	= 0	X		=	0
Independent Claims		-3 **	= 0	X		=	0
Multiple Dependent				X		=	0

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	88	2201	44	Independent claims in excess of 3
1203	300	2203	150	Multiple dependent claim, if not paid
1204	88	2204	44	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	430	2252	215	Extension for reply within second month	
1253	980	2253	490	Extension for reply within third month	
1254	1,530	2254	765	Extension for reply within fourth month	
1255	2,080	2255	1,040	Extension for reply within fifth month	
1401	340	2401	170	Notice of Appeal	
1402	340	2402	170	Filing a brief in support of an appeal	340
1403	300	2403	150	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,370	2453	685	Petition to revive – unintentional	
1501	1,370	2501	685	Utility issue fee (or reissue)	
1502	490	2502	245	Design issue fee	
1503	660	2503	330	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 340

SUBMITTED BY				Complete *(if applicable)*	
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Signature				*Date*	12/3/04

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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AF
IFW

Practitioner's Docket No. 1226a **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Charles William Norman
Application No.: 09/899,583 Group No.: 2665
Filed: 07/06/01 Examiner: Steven H. D. Nguyen

For: Method and System for Transporting a Secondary Communication Signal with a Primary Communication Signal

Mailstop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Appeal Brief

Real Party in Interest

Sprint Communications Company, L.P. is the real party in interest.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 35-46 are the claims on appeal. Claims 1-34 have been cancelled. Claims 35-46 are pending and are under a final rejection.

Status of Amendments

No amendments have been filed subsequent to the final rejection.

Summary of the Invention

The invention is applicable to both Synchronous Optical Network (SONET) systems and to Synchronous Digital Hierarchy (SDH) systems. SDH is the European version of SONET. A SONET example of the invention is described below. Before summarizing the invention, it is helpful introduce some well known SONET concepts and to identify a problem solved by the invention.

In SONET, a "path" defines an end-to-end connection from the source of the SONET signal to the destination of the SONET signal. The path is comprised of a series of "lines" that typically run between SONET Add/Drop Multiplexers (ADMs). Each line is comprised of a series of "sections", where the sections of a line are typically separated by amplifiers. Figure 1 below illustrates a simple SONET path with lines and sections.

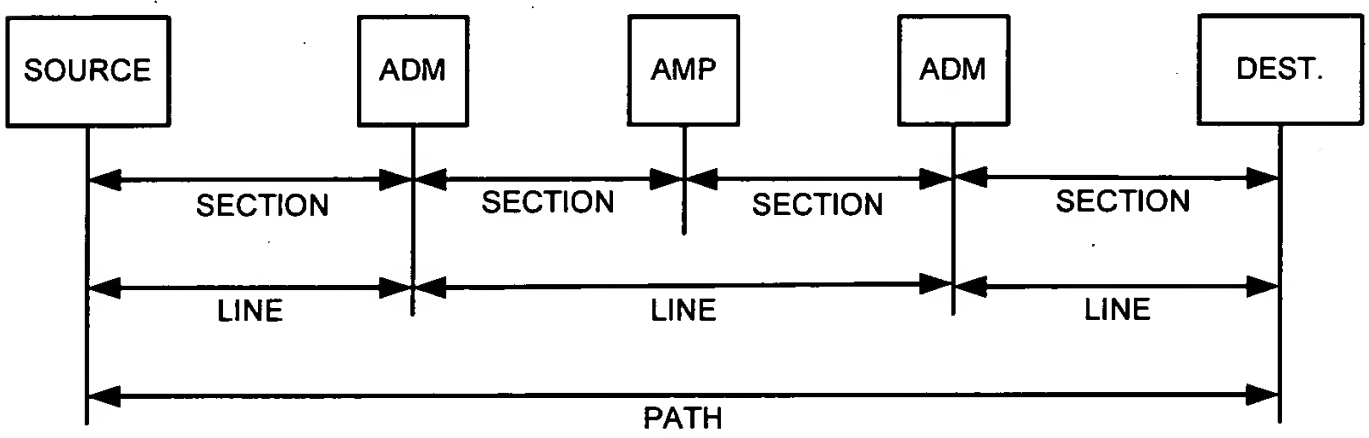

FIGURE 1

A SONET signal has an overhead and a payload. (See the application page 4, line 27 to page 5, line 8). The overhead includes Section Overhead (SOH) and Line Overhead (LOH). The payload section includes Path Overhead (POH) and user information. Figure 2 below illustrates a typical SONET signal having the LOH and SOH in the overhead and the POH in the payload.

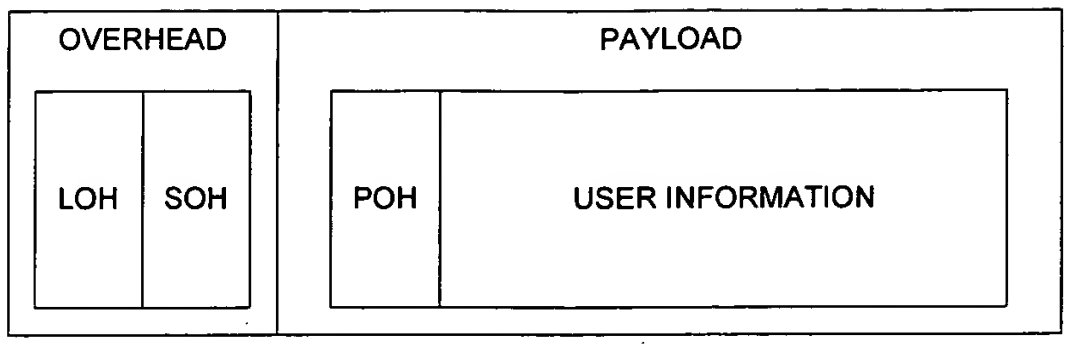

FIGURE 2

A key aspect of the invention is overhead "termination." In SONET and SDH, a device "terminates" overhead by: 1) retrieving the overhead data from the overhead data fields, 2) processing the overhead data to facilitate network operations, 3) generating new overhead data, and 4) loading the new overhead data into the overhead data fields. Thus, the "termination" of overhead entails the replacement of old overhead data with new overhead data. The signal source initially generates the POH, LOH, and SOH. At the end of each section, the receiving device terminates the SOH. At the end of each line, the receiving device terminates the LOH. ***Note that the LOH and SOH data are repeatedly replaced through the overhead termination process during the transit of the SONET signal.*** The POH data remains the same from end-to-end.

The invention solves a problem that occurs when a first communication network uses a second communication network to transport a SONET signal. (See the application page 5, line 9 to page 6, line 7). For example in Figure 1, consider that the source and destination are in a different network from the ADMs and the amp. When the first ADM receives a SONET signal from the source, the first ADM terminates the SOH and the LOH. The amp terminates the SOH, and the second ADM terminates the SOH and the LOH. ***Note that the SOH and LOH in the SONET signal transmitted by the source will be different from the SOH and LOH in the SONET signal received by the destination because of the intermediate terminations of the SOH and LOH.***

The problem occurs if the first communication network wants their SOH and LOH to remain the same. In other words, the first communication network may want the same signal that is transferred by the source to be delivered to the destination – including the same LOH and SOH. In the prior art, this would have required running an optical fiber

directly between the source and destination to avoid any SOH and LOH termination points. Unfortunately, running the direct optical fiber is not always practical.

The invention solves the above problem with a first adaptor assembly 108 and a second adaptor assembly 110. (See the application page 7, line 5 to page 12, line 18). The first adaptor assembly 108 could be the first ADM shown above, and the second adaptor assembly 110 could be the second ADM shown above. The first adaptor assembly 108 receives a first SONET signal having SOH, LOH, and payload. (See the application page 7, lines 6-9; page 9, line 25 to page 10, line 8; and page 10, lines 26-29). The first adaptor assembly 108 terminates the SOH and LOH, and transfers the ***terminated*** SOH and LOH. (See the application page 7, lines 17-27; page 10, lines 13-19; and page 11, lines 20-29). The second adaptor assembly 110 receives the ***terminated*** SOH and LOH. (See the application page 7, lines 24-27; page 12, lines 25-28 -- note that assemblies 108 and 110 operate in a similar fashion, and the operation of the "second" assembly is described with respect to assembly 108 in some portions of the text). The first adaptor assembly 108 also transfers the payload, and the second adaptor 110 assembly receives the payload. (See the application page 7, lines 19-27). The second adaptor assembly 110 generates a second SONET signal having the ***terminated*** SOH and LOH, and having the payload. (See the application page 7, line 24 to page 8, line 6; and page 13, line 7, to page 15, line 10).

Thus, the second adaptor 110 assembly can transfer a SONET signal having the original SOH and LOH that was received by the first adaptor assembly 108, even though the original SOH and LOH was terminated by the first adaptor assembly 108. Advantageously, the destination 112 receives the same SONET signal (the same SOH, LOH, and payload) that was transferred by the source 106, even though the SOH and LOH were terminated in transit.

With respect to SDH, the SONET LOH is referred to as Multiplexer Section Overhead (MSOH), and the SONET SOH is referred to as Regenerator Section Overhead (RSOH). Other than this change in terminology, the invention effectively operates the same for SDH as it does for SONET. (See the application page 9, lines 12-24). The first adaptor assembly 108 receives an SDH signal from source 106. The first adaptor assembly 108 terminates the MSOH and the RSOH and transfers the ***terminated*** MSOH

and RSOH, along with the payload, to second adaptor assembly 110. The second adaptor assembly generates and transfers an SDH signal having the payload and the ***terminated*** MSOH and RSOH to destination 112.

Issues

1. Whether claims 41-42 and 44-45 are unpatentable under 35 U.S.C. 102(e) over U.S. patent 5,600,648 (Furuta).

2. Whether claims 35-40, 43, and 46 are unpatentable under 35 U.S.C. 103(a) over U.S. patent 5,600,648 (Furuta) in view of U.S. patent 5,416,768 (Jahromi).

Grouping of Claims

Appellant does not assert any special grouping of claims.

Argument

1. Whether claims 41-42 and 44-45 are unpatentable under 35 U.S.C. 102(e) over U.S. patent 5,600,648 (Furuta).

Claims 41-42 and 44-45 require that a first adaptor assembly receive an SDH signal and terminate the RSOH and MSOH information in the SDH signal. The first adaptor assembly transfers the payload and the ***terminated*** RSOH and MSOH. A second adaptor assembly receives the payload and the ***terminated*** RSOH and MSOH. The second adaptor assembly generates another SDH signal having the payload and the ***terminated*** RSOH and MSOH. Thus, the invention receives an original SDH signal, terminates overhead in the original SDH signal, and transfers the terminated overhead, so the original SDH signal can be replicated downstream.

Furuta is directed to the location and inspection of the Path Overhead (POH). (See Furuta, column 1, lines 25-30). To inspect the POH, the Furuta system removes the RSOH/MSOH from the SDH signal, and after POH inspection, the Furuta system re-inserts the RSOH/MSOH back to the SDH signal. More specifically, interface 30a removes the RSOH/MSOH information from the SDH signal, and interface 30b adds the RSOH/MSOH information back to the SDH signal. (See Furuta, column 4, line 53 to

column 5, line 24). In between interfaces 30a and 30b, the Furuta system locates and inspects the POH.

Furuta barely mentions RSOH or MSOH processing. Furuta does not disclose with clarity whether the RSOH and MSOH are terminated or not. If the RSOH and MSOH are not terminated, then Furuta certainly does ***not*** teach that any ***terminated*** RSOH and MSOH are transferred as required by the claims. If the RSOH and MSOH are terminated, then ***new*** RSOH and MSOH data would be loaded into the SDH signal in the conventional manner, and the ***terminated*** overhead data would ***not*** be loaded into the SDH signal. Thus, whether Furuta terminates the RSOH and MSOH or not is irrelevant, because ***Furuta clearly does not teach the transfer of terminated overhead data for use in replicating an original SDH signal downstream.***

In support of the rejection, the Examiner has cited the section of Furuta relating to Figure 19. The cited section simply does not teach what the Examiner asserts. The cited section certainly does not teach the ***termination*** of overhead data, and the transfer of the ***terminated*** overhead data for use in replicating an original SDH signal downstream. When overhead data is terminated, new overhead data takes its place. If the Furuta system terminates overhead data, then it would replace the terminated overhead data with new overhead data (it would not transfer terminated data). If the Furuta system merely removes and reinserts the same overhead data, then the overhead data was never terminated. ***Furuta simply does not teach the transfer of terminated overhead data as claimed..***

2. Whether claims 35-40, 43, and 46 are unpatentable under 35 U.S.C. 103(a) over U.S. patent 5,600,648 (Furuta) in view of U.S. patent 5,416,768 (Jahromi).

Claims 35-40, 43, and 46 require that a first adaptor assembly receive a SONET signal and terminate the LOH and SOH information in the SONET signal. The first adaptor assembly transfers the payload and the ***terminated*** LOH and SOH. A second adaptor assembly receives the payload and the ***terminated*** LOH and SOH. The second adaptor assembly generates another SONET signal having the payload and the ***terminated*** LOH and SOH. Thus, the invention receives an original SONET signal,

terminates overhead in the original SONET signal, and transfers the terminated overhead, so the original SONET signal can be replicated downstream.

Furuta is directed to the location and inspection of the Path Overhead (POH). (See Furuta, column 1, lines 25-30). To inspect the POH, the Furuta system removes the RSOH/MSOH from the SDH signal, and after POH inspection, the Furuta system re-inserts the RSOH/MSOH back to the SDH signal. More specifically, interface 30a removes the RSOH/MSOH information from the SDH signal, and interface 30b adds the RSOH/MSOH information back to the SDH signal. (See Furuta, column 4, line 53 to column 5, line 24). In between interfaces 30a and 30b, the Furuta system locates and inspects the POH.

Furuta barely mentions RSOH or MSOH processing. Furuta does not disclose with clarity whether the RSOH and MSOH are terminated or not. If the RSOH and MSOH are not terminated, then Furuta certainly does ***not*** teach that any ***terminated*** RSOH and MSOH are transferred as required by the claims. If the RSOH and MSOH are terminated, then ***new*** RSOH and MSOH data would be loaded into the SDH signal in the conventional manner, and the ***terminated*** overhead data would ***not*** be loaded into the SDH signal. Thus, whether Furuta terminates the RSOH and MSOH or not is irrelevant, because ***Furuta clearly does not teach the transfer of terminated overhead data for use in replicating an original SDH signal downstream***.

In support of the rejection, the Examiner has cited the section of Furuta relating to Figure 19. The cited section simply does not teach what the Examiner asserts. The cited section certainly does not teach the ***termination*** of overhead data, and the transfer of the ***terminated*** overhead data for use in replicating an original SDH signal downstream. When overhead data is terminated, new overhead data takes its place. If the Furuta system terminates overhead data, then it would replace the terminated overhead data with new overhead data (it would not transfer terminated data). If the Furuta system merely removes and reinserts the same overhead data, then the overhead data was never terminated. ***Furuta simply does not teach the transfer of terminated overhead data as claimed..***

The Examiner cited Jahromi for its teaching of SONET and of two networks exchanging SONET signals. The Examiner did not assert that Jahromi taught the transfer

of terminated overhead data for use in replicating an original SONET/SDH signal downstream, and in fact, Jahromi does not teach the transfer of terminated overhead data for use in replicating an original SONET/SDH signal downstream. Thus, a combination of Furuta and Jahromi does not teach the transfer of terminated overhead data for use in replicating an original SONET/SDH signal downstream.

Appendix

The claims under appeal follow below:

35. A method of operating a Synchronous Optical Network (SONET) system, the method comprising:

receiving a first SONET signal into a first adaptor assembly, wherein the first SONET signal has section overhead information, line overhead information, and a payload;

in the first adaptor assembly, terminating the section overhead information and the line overhead information in the first SONET signal;

transferring the terminated section overhead information, the terminated line overhead information, and the payload from the first adaptor assembly;

receiving the terminated section overhead information, the terminated line overhead information, and the payload into a second adaptor assembly;

in the second adaptor assembly, generating a second SONET signal having the terminated section overhead information, the terminated line overhead information, and the payload; and

transferring the second SONET signal from the second adaptor assembly.

36. The method of claim 35 wherein transferring the terminated section overhead information and the terminated line overhead information from the first adaptor assembly comprises adding the terminated section overhead information and the terminated line overhead information to unused overhead space of a third SONET signal.

37. The method of claim 35 wherein receiving the first SONET signal comprises receiving the first SONET signal from a first carrier network into a second carrier network, and wherein transferring the second SONET signal comprises transferring the second SONET signal from the second carrier network to the first carrier network.

38. A Synchronous Optical Network (SONET) system comprising:

a first adaptor assembly configured to receive a first SONET signal having section overhead information, line overhead information, and a payload, to terminate the section overhead information and the line overhead information in the first SONET signal, and to transfer the terminated section overhead information, the terminated line overhead information, and the payload; and

a second adaptor assembly configured to receive the terminated section overhead information, the terminated line overhead information, and the payload, to generate a second SONET signal having the terminated section overhead information, the terminated line overhead information, and the payload, and to transfer the second SONET signal.

39. The SONET system of claim 38 wherein the first adapter assembly is configured to add the terminated section overhead information and the terminated line overhead information to unused overhead space of a third SONET signal.

40. The SONET system of claim 38 wherein the first adapter assembly receives the first SONET signal from a first carrier network into a second carrier network, and wherein the second adapter assembly transfers the second SONET signal from the second carrier network to the first carrier network.

41. A method of operating a Synchronous Digital Hierarchy (SDH) system, the method comprising:

receiving a first SDH signal into a first adaptor assembly, wherein the first SDH signal has regenerator section overhead information, multiplexer section overhead information, and a payload;

in the first adaptor assembly, terminating the regenerator section overhead information and the multiplexer section overhead information in the first SDH signal;

transferring the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload from the first adaptor assembly;

receiving the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload into a second adaptor assembly;

in the second adaptor assembly, generating a second SDH signal having the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload; and

transferring the second SDH signal from the second adaptor assembly.

42. The method of claim 41 wherein transferring the terminated regenerator section overhead information and the terminated multiplexer section overhead information comprises adding the terminated regenerator section overhead information and the terminated multiplexer section overhead information to unused overhead space of a third SDH signal.

43. The method of claim 41 wherein receiving the first SDH signal comprises receiving the first SDH signal from a first carrier network into a second carrier network, and wherein transferring the second SDH signal comprises transferring the second SDH signal from the second carrier network to the first carrier network.

44. A Synchronous Optical Network (SDH) system comprising:

a first adaptor assembly configured to receive a first SDH signal having regenerator section overhead information, multiplexer section overhead information, and a payload, to terminate the regenerator section overhead information and the multiplexer section overhead information in the first SDH signal, and to transfer the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload; and

a second adaptor assembly configured to receive the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload, to generate a second SDH signal having the terminated regenerator section overhead information, the terminated multiplexer section overhead information, and the payload, and to transfer the second SDH signal.

45. The SDH system of claim 44 wherein the first adapter assembly is configured to add the terminated regenerator section overhead information and the terminated multiplexer section overhead information to unused overhead space of a third SDH signal.

46. The SDH system of claim 44 wherein the first adapter assembly receives the first SDH signal from a first carrier network into a second carrier network, and wherein the second adapter assembly transfers the second SDH signal from the second carrier network to the first carrier network.

SIGNATURE OF PRACTITIONER

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